

ABSTRACT

This invention is directed to provide a thin film of iron nitride of high saturation and low coercive force and a method of forming stable at a high speed a thin film of iron nitride without requiring any specific substrate.

The method of the present invention uses an opposed-target DC sputtering method, in which Ar and N₂ gasses are introduced into a film formation chamber, DC power is applied to iron targets in the Ar and N₂ gasses and a thin film of iron nitride is formed on a substrate. A heat treatment is carried out in vacuum after the formation of the thin film.